## AMENDMENTS TO THE CLAIMS

**Please amend Claims 4, 6, 9, 11-13, 16 and 20-22 as follows.**

1. (Original) A method for detection of bone fractures using image processing of a digitised x-ray image; wherein the image processing comprises an adaptive sampling scheme.

2. (Original) The method as claimed in claim 1, wherein the image processing comprises extracting a contour of the bone in the digitised x-ray image.

3. (Original) The method as claimed in claim 2, wherein the extracting of the contour of the bone in the digitised x-ray image comprises applying a Canny edge detector to the digitised x-ray image.

4. (Currently amended) The method as claimed in claims 2 ~~or 3~~, wherein the extracting of the contour of the bone in the digitised x-ray image comprises applying a snake algorithm to the digitised x-ray image.

5. (Original) The method as claimed in claim 4, wherein applying the snake algorithm to the digitised x-ray image comprises creating a Gradient Vector Flow (GVF).

6. (Currently amended) The method as claimed in ~~any one of~~ claims 1 ~~to 5~~, wherein the adaptive sampling scheme comprises identifying a bounding box around an area of interest based on the extracted contour of the bone.

7. (Original) The method as claimed in claim 6, wherein the bounding box is divided into a predetermined number of sampling points.

8. (Original) The method as claimed in claim 7, wherein a sampling region around the sampling points is chosen to cover image pixel points between the sampling points.

9. (Currently amended) The method as claimed in ~~any one of the preceding~~ claims 1, wherein the image processing comprises calculating one or more texture maps of the digitised x-ray image and detecting a bone fracture based on respective reference texture maps.

10. (Original) The method as claimed in claim 9, wherein the texture maps comprise a Gabor texture orientation map.

11. (Currently amended) The method as claimed in claims ~~9 or 10~~, wherein the texture maps comprise an Intensity gradient direction map.

12. (Currently amended) The method as claimed in ~~any one of~~ claims ~~9 to 11~~, wherein the texture maps comprise a Markov Random Field texture map.

13. (Currently amended) The method as claimed in ~~any one of~~ claims ~~9 to 12~~, wherein the image processing comprises calculating one or more difference maps between the respective texture maps calculated for the digitised x-ray image and the respective reference texture maps.

14. (Original) The method as claimed in claim 13, wherein the difference maps are classified using one or more classifiers.

15. (Original) The method as claimed in claim 14, wherein the difference maps are classified using Bayesian classifiers.

16. (Currently amended) The method as claimed in claims ~~14 or 15~~, wherein the difference maps are classified using Support Vector Machine classifiers.

17. (Original) The method as claimed in claim 1, wherein the image processing comprises:
determining a femoral shaft axis in the digitised x-ray image;
determining a femoral neck axis in the digitised x-ray image;

measuring an obtuse angle between the femoral neck axis and the femoral shaft axis; and

detecting the bone fracture based on the measured obtuse angle.

18. (Original) The method as claimed in claim 17, comprising calculating level lines from respective points on the contour of the bone in the digitised x-ray image and extending normally to the contour to respective other points on the extracted contour.

19. (Original) The method as claimed in claim 18, wherein determining the femoral shaft axis is based on midpoints of the level lines in a shaft portion of the contour of the bone.

20. (Currently amended) The method as claimed in claims 18 ~~or 19~~, wherein determining the femoral neck axis is based on the level lines in femoral head and neck portion of the contour of the bone.

21. (Currently amended) A system for detection of bone fractures comprising:

means for receiving a digitised x-ray image; and

means for processing the digitised x-ray image for detection of bone fractures;

wherein the means for processing the digitised x-ray image utilises an adaptive sampling scheme.

22. (Currently amended) A system for detection of bone fractures comprising:

a database for receiving and storing a digitised x-ray image; and

a processor for processing the digitised x-ray image for detection of bone fractures;

wherein the processor processes the digitised x-ray image utilising an adaptive sampling scheme.

23. (Original) A data storage medium having stored thereon computer code means for instructing a computer to execute a method for detection of bone fractures, the method comprising:

utilising image processing of a digitised x-ray image;

wherein the image processing comprises an adaptive sampling scheme.